

DRAFT MEETING SUMMARY (v.1)

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HANFORD ADVISORY BOARD

TANK WASTE COMMITTEE

February 12, 2002

Richland, WA

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This is only a summary of issues and actions in this meeting. It may not represent the fullness of ideas discussed or opinions given, and should not be used as a substitute for actual public involvement or public comment on any particular topic unless specifically identified as such.

Introduction

Paige Knight said Hanford Watch in Portland had been asking for a simple chart the public could access to follow the current status of tank farm and tank waste treatment issues. It could include the start of vitrification, the Balance of Mission and an update on closure status. Steve Wiegman, U.S. Department of Energy-Office of River Protection (DOE-ORP), suggested the chart be organized around the four big baseline topics.

February Board Meeting Follow-Up

Leon Swenson discussed follow-up to the February Board meeting. Key issues were the impact of the Top-to-Bottom Review on budgets and the way to get the vitrification plant operating and take care of waste in the long haul. The direction from the Hanford Advisory Board (HAB) meeting was TWC would probably have a responsibility to continue looking at technical issues. The HAB would continue to be very interested in seeing how the Top-to-Bottom Review plays out, especially as it relates to changes to the Tri-Party Agreement (TPA). This is an involved process and has a very significant public input component that was not necessarily addressed in the Top-to-Bottom Review. That, coupled with the fact that nobody seemed to have a handle yet on the ground rules and how anyone would get a portion of the \$800 million to \$1 billion of the acceleration

funds, was causing a great deal of apprehension as to how the Hanford site could get enough of the pool to meet TPA milestones.

Committee Discussion

- Pam Brown was concerned that a lot of the information the DOE-ORP provided to the Top-to-Bottom Review was not included. DOE-ORP was not acknowledged for its good contracts and other good work. Pam was frustrated that they had to regain ground that should not have been lost. The congressional delegation was indicating not to worry and that the project would hold.
- Ken Bracken felt it was good that DOE-ORP and the DOE-Richland Operations Office (DOE-RL) were not highlighted in a negative way in the Top-to-Bottom Review.
- Leon Swenson commented that the Top-to-Bottom Review had raised the anxiety level in a number of places, particularly because no one knew how it would affect budget figures or redefining endpoints.
- Ken Bracken said the Top-to-Bottom Review had identified a need for technical evaluation but did not say what that meant. Ken felt that until DOE defined technical risk evaluation and how it would be universally applied at all sites, the report did not have a lot of merit. The HAB has been talking about cleanup based on risk for years. The administration needs to redefine the definition of high-level waste, the extent of institutional controls (the fundamental basis for future action), and the extent of waste remaining.
- Paige Knight was concerned with an implication in the Top-to-Bottom Review to eliminate Resource Conservation and Recovery Act (RCRA) regulatory jurisdiction, pulling the state out of the process. She also had reservations with the implications to have the agencies renegotiate their agreements and for DOE-Headquarters (DOE-HQ) to streamline the National Environmental Policy Act (NEPA) process. Paige did not trust where DOE-HQ was coming from. She was disturbed that the report suggested looking at sites as a national whole; she emphasized not all sites are equal, and not all stakeholder values across the country are the same. The whole report seemed to focus on land use, and Paige thought land preservation should also be considered. The report also wanted to change the point of compliance. Paige took that to mean they would look at what went into the river, and not how it affected groundwater.
- Jeff Luke thought the Top-to-Bottom Review might define an end state for the site or for certain areas.
- Leon Swenson asked Steve Wiegman if DOE-ORP was compiling a list of questions about the Top-to-Bottom Review similar to that being developed by the HAB. Steve replied that DOE-ORP was beginning to do that, approaching it from the standpoint of what it means to DOE-ORP. Steve noted that the HAB could really help, particularly the TWC, with input on points of compliance, stewardship, and waste that was left versus waste removed from the site. Many of these issues are a part of the C3T work. Steve said that while it was timely that the HAB exposure scenario task force was starting, he did not want the task force to preclude TWC from working on DOE-ORP issues.
- Steve Wiegman remarked that regulations are risk-based. Once DOE-ORP starts following the letter of the law, however, it does not think about risk as much as

compliance. When DOE-HQ said it wanted to be risk-based, was that in the context of applying regulations or in a new context? There were specific ways in which risk was already considered for tank closure in the TPA, so DOE-ORP was trying to follow the TPA. Steve thought they needed to get all of the decision makers to consistently think this was a regulated industry.

- Leon Swenson said he was hearing a strong sentiment from the committee to stay engaged in assessing the technical aspects of the Top-to-Bottom Review.
- Paige Knight was worried that so much of the Top-to-Bottom Review focused on the radionuclide end of tank waste, though there are other chemicals that are just as deadly. She worried about the definition of grout. Even DOE's own documents said grout would not hold up because Hanford tank waste was too hot. She also observed that the Top-to-Bottom Review built on the recent General Accounting Office (GAO) report criticizing poor management at DOE. Paige did not see any details in the Top-to-Bottom Review that explained how DOE planned to address a change in management attitude.
- Steve Wiegman explained that DOE-ORP believed it had made major strides in the last few years with the quality and management of contracts. Leon Swenson asked if the contracts would permit them to do the required technical work. Paige Knight wondered if they were based on endpoints. Pam Brown thought TWC telling DOE-HQ the contracts were going in the right direction would be more powerful than DOE-ORP saying it. Also, in terms of responding to the Top-to-Bottom Review about grout, the committee could make the general comment that it would not accept alternative waste treatment and packing without a full NEPA analysis. They would not do it in 30 days and change the TPA. Members of HAB could also go back to Washington DC and articulate the advice.
- Ken Bracken observed that in stabilizing high-risk materials based on the Top-to-Bottom Review, the 75% figure for non-vitrification was only based on wastes with high curies. Ken was not sure what the definition of high-curie, long-lived was.
- Paige Knight requested that DOE-ORP restate its top ten technical and programmatic risks every time it came to the committee, in case anything had moved or changed from the list. She wants the list synthesized so she can get it out to the public.

"Getting Vit." – River Protection Project Risks

Harold Heacock framed the vitrification plant issue in terms of what would keep the project from working. The first main area was the funding required to keep the job on schedule. The second area was a look at the approval process for authorization to begin construction. The first part of the approval process is Washington State Department of Health (WDOH) permits. The second is Washington State Department of Ecology (Ecology) permits, including a series of waste management permits and two air permits. WDOH air permits are probably more problematic because they have to have a greater proportion of plant design completed before they can be issued. This is a potential showstopper. Ecology's permits seem to be moving fairly well. The third area is regulatory function. Harold did not see any showstoppers here, just more typical regulatory hurdles to get over before the start of construction. Harold thought the real

key would be Bechtel National, Inc. (BNI) moving aggressively toward completing the design and getting the permits in place.

Pam Brown noted she had raised the issue about the timing of the WDOH air quality permit because the committee had just been informed WDOH would be the one to stop construction from proceeding. WDOH had responded that it was working very hard, and its managers felt good about their working relationship with DOE.

John Martell, WDOH, stated that DOH had finalized a letter the previous day identifying some of the issues with the current Best Available Radionuclide Control Technology Assessment (BARCT). WDOH needs additional information for the BARCT for incorporation into the Notice of Construction. The regulations allow 60 days to draft a permit.

Jim Rasmussen, DOE-ORP, said DOE-ORP had drafted a response to WDOH offering to sit down with WDOH on a regular basis. DOE-ORP was very cognizant of the 60 day window to a draft a permit. DOE-ORP wanted WDOH to start the review with the information they did have, so all of the work would not have to be done at once. This is especially important if the review creates additional comments.

Leon Swenson asked how WDOH would rate the probability of success of keeping this process moving. John Martell replied that WDOH was not concerned with the process stopping, but rather with the schedule and the July 1st target date. Jim Rasmussen added that the Notice of Construction for the radiation permits is now DOE-ORP's biggest concern. DOE-ORP was shooting for a July 1, 2002 start of construction, and Jim was very optimistic about starting on time.

Gail Laws, WDOH, said that BNI's schedule had WDOH receiving complete information on February 14. Then there would be a 60-day permit writing window. There are also 30-45 day public comment periods for the permits to factor in. The bottom line is that there is not a great deal of extra time between now and July 1 within which to fit the completion of necessary design to support permit writing, draft permits, obtain public comment, and issue permits. Jim Rasmussen emphasized that both agencies had successfully compressed time schedules, but the public involvement process could not be compressed.

Committee Discussion

- Jeff Luke understood Gail Laws saying the July 1 date was based on WDOH receiving complete information on February 14. Today is February 12, however, and WDOH did not have complete information or expect it by the 14th. Jeff asked if WDOH expected to see a slip, and Gail replied that it did. She clarified that Ecology ran the public involvement process. Once the 30 or so days were over, the process went to the U.S. Environmental Protection Agency (EPA), and then DOH could make an administrative amendment to the air operating permit.
- Jeff Luke asked if Ecology had the flexibility based upon public comments to make a determination as to how long it would take them to incorporate comments and if there

would be public hearings. Steve Skurla, Ecology, believes that flexibility is there. Ecology is looking at combining the public process for more than one permit and having at least one local public meeting.

- Ken Bracken asked if the slip was day-to-day, what the plan was for DOE and Bechtel to get the information to the regulatory agencies, so they could do this in time. Ken expressed the importance of the work being done properly, as opposed to just making the July 1 date. Doug Huston clarified that July 1 was a self-imposed date, and the actual Tri-Party Agreement (TPA) date was not until the end of December. Jim Rasmussen reaffirmed Ken's point that the regulated public involvement time periods and compressed schedule did not release DOE-ORP from getting the right information to WDOH, in order to ensure a good permit.
- Steve Skurla wanted everyone to realize that by moving the date to July, four months were taken out of the permitting schedules. Ecology had compressed the public involvement process as much as possible. Ecology was tentatively hoping to start public review on the dangerous waste permit by March 11; the actual date may be plus or minus one week. Ecology also had two air permits: the Prevention of Significant Deterioration (PSD) for nitrous oxide and sulfur dioxide; and a toxics permit. BNI had submitted technical evaluations based on the best available technical reports. Ecology was reviewing those evaluations in detail, and its initial comments were favorable. Ecology was now awaiting the actual air application.
- Leon Swenson commented that these permits are specifically oriented toward construction activities for the vitrification plant and are not impacted by Balance of Mission considerations. He asked how far back into the process they would have to go to modify permits. John Martell replied that for the air radiation permit, WDOH would have to start from the beginning if there was any increase in through-put at the plant. They would have to re-evaluate controls to see if they were adequate for increased emissions. Steve Skurla said there would be extensive modifications necessary to the dangerous waste permit, but there would not be insurmountable hurdles if the design information became available far enough in advance.
- Leon Swenson asked if permitting was based on the original, not the enhanced, throughput issues. Gail Laws told him if DOE increased the throughput, permit applications would have to include the higher number, and WDOH would have to write a permit for that amount. Steve Skurla said Ecology was expecting to deal with additions to the throughput several years from now, rather than at the start of applications. Gail added the high-level design had space for an additional melter.
- Pam Brown commented that no work was going on to include steam reforming in the permitting, so that would have to be an amendment later on. She suggested that it may be better to have it in a separate building because it could then be permitted for that function.
- Dave Johnson asked how there could be a delay in construction of the first plant with the changes happening in the Balance of Mission. Jeff Luke had heard that DOE was providing all state entities with information to build plant "X". DOE can continue operating "X" until it has approval to add on plant "Y". That in no way limits DOE from operating at the capacity that is already approved.

- Al Hawkins, DOE, discussed the Phased Construction Authorization Request (CAR). The contractor has asked DOE to look at the safety authorization in discrete pieces. DOE's schedule is also very tight with respect to making the July date.
- Steve Wiegman commented that in the process of looking at optimizing the plant for its initial operations, Leif Erickson, DOE-ORP and the team would make no changes to the plant that affect permitting or the start of operations.
- Suzanne Dahl, Ecology, pointed out that they should probably be doing risk-assessment based on the high end of throughput. For example, if there were plans to bring the facility up to six tons per day and they were currently running risk assessments at five tons that would mean modifying the facility. Steve Wiegman noted that if they wanted to increase the throughput, they would have to redo plant performance demonstrations because doubling throughput does not necessarily mean doubling emissions. The ability to have higher capacity has to be accommodated in the facility design.
- Pam Brown remarked that BNI was following its contract carefully, but it would be expensive to run tests again versus requesting a higher capacity permit. Why not do it now? Leon Swenson asked what the impact would be to the whole permitting process and ability to begin construction at this late date.
- Paige Knight asked if the Top-to-Bottom Review would throw the permitting off. Pam Brown added her fear was DOE-HQ did not want them to vitrify as much as the facility was capable of.
- Jim Rasmussen explained that because of the lack of definition with the Balance of Mission, DOE was permitting the plant for the baseline. The Balance of Mission definition would add the detail later. For now, DOE is struggling with the details of designing the current plant, without any expansion or modifications. Steve Wiegman commented that Harry Boston was not proposing to change the baseline at this point because it is impossible to make changes and stay on schedule.
- Dave Johnson felt introducing a new construction phase later could mean shutting down the original facility. He thought they should permit for maximum throughput.
- Doug Huston asked if the permitting was for the design capacity of the plant. The plant is being designed for three metric tons per day in all permits. Suzanne Dahl asked if going from three metric tons to six would change any of the control technologies or emission control devices they would have to put in. If so, was there any room to put those in? A representative from BNI explained that BNI's contract required it to size the buildings for six metric tons per day.
- Harold Heacock thought they should start looking at other processes now and build in the potential for big delay or cost increases. The strategy appeared to be to get permitted. Changes in the overall policy of what gets treated or what the product is would have to be addressed in time.

Doug Huston asked if they wanted to say something about Harry Boston's impending transfer back to DOE-HQ. Jeff Luke thought they should move ahead with the assumption that Harry's leaving would have a negative impact on the vitrification plant. Ken Bracken asked what the benefit was to move a senior manager from a major construction project at this point in time.

Doug Huston thought the committee could say it was disappointed in Harry Boston's move, and it could make suggestions to consider with his replacement. Jeff Luke commented that the HAB usually acted upon its conscience without a great deal of concern about being strategic. He felt this was an example where they had nothing to lose by writing a letter to DOE-HQ expressing their concerns about the change in management. If "Waste to Wilderness" was the direction the administration was going, what did they have to lose by asking what DOE-HQ and DOE-ORP might gain from Harry's move?

Recovery Plan – River Protection Project Baseline

Jeff Luke outlined four questions about the Recovery Plan. 1) How does the Recovery Plan address current TPA milestones? 2) What TPA changes will be driven by the Plan? 3) Is small "c" closure part of the Recovery Plan? He believed closure was defined by Washington Administrative Code (WAC) 173-303 containing the state RCRA implementation regulations. DOE has talked at HAB meetings about closing certain tanks with more waste than the WACs would allow. 4) What is the link (or not) between big "C" closure and the Recovery Plan?

Leon Swenson asked how that question related to the tank closure discussion. Jeff Luke explained that they left the waste in the tanks to the point where they did not need another vitrification plant or expansion that would impact the vitrification plant operation and modification, and the building of additional capacity. Leon felt that was beyond baseline recovery and was part of the Balance of Mission. Roger Stanley, Ecology, said that was one issue Ecology and DOE-ORP had wrestled with when considering the Recovery Plan. In the end, they decided they did not want the plan drug down by those issues, so they intentionally split it off.

Paige Knight thought it was important to how the Recovery Plan matches or overlays the baseline. Is the current baseline still our baseline? Does it match the TPA? What is the schedule? Where will there be impacts to the schedule from the Top-to-Bottom Review? Are there any opportunities here that we can capture?

Mary Burandt, DOE-ORP, gave an overview of the Recovery Plan. The plan consists of four pieces – a narrative section, a budget section, TPA change requests, and baseline project schedules. Mary provided a summary of the TPA milestones, and noted there were two construction progress milestones (M-62-07-A and M-62-07-B) that were previously to be determined. Now they had scope and a date attached to them. The start date of hot commissioning for Phase 1 was the same. The rest of the milestones adjusted to the project schedule. Roger Stanley recalled that the requirement for the Recovery Plan actually occurred last summer. Some of the old TPA dates get lined up with the current baseline, primarily because the FY2002 budget had come through.

Committee Discussion

- Harold Heacock asked if this had met what Ecology anticipated to stop the clock or do something about the ongoing fine situation. Roger Stanley replied that the

penalties that had begun to be imposed last August were being worked out with the Attorney General's office and DOE-ORP as a separate document. DOE-ORP was hoping to reach resolution on that. The current schedule for public release of the Recovery Plan is March 11.

- Jeff Luke asked why the milestone date to start the hot commissioning phase had not changed, but the complete hot commissioning date had slipped. Mary Burandt replied that it had to do with the way the private company worked. One of the core requirements they had put on the Recovery Plan was that it would demonstrate the 2007 date was still achievable. The January 2011 date had been part of the baseline, since the Request for Proposal (RFP) had gone out for a change of contract. Steve Wiegman said that by the time this facility was fully commissioned, they will have treated more of the waste than would have been treated under the previous BNFL schedule because they wanted to be sure the plant would run fully as stated in the contract. Ken Bracken clarified that the new dates were tied to the contract, so that within the contract there is a definition of what startup means.
- Roger Stanley said the Recovery Plan would include TPA change requests. Suzanne Dahl reported that the plan would show a change in the start of construction, a new definition of interim construction milestones, a change in the hot commission date, and changes in disposal facilities.
- Peter Bengtson, Pacific Northwest National Laboratory (PNNL), clarified that the Recovery Plan, dangerous waste permit, and TPA change package were all scheduled to begin public comment on March 11. He asked for any suggestions on how to streamline the public involvement processes. Suzanne Dahl reminded everyone that there was a question of where the public would want meetings. For example, there may not be a desire outside of the area for a meeting on permitting the vitrification plant, but people across the region may care about the Recovery Plan.
- Jeff Luke talked about the milestone to complete the critical system to 80% (M-90-09-T01). It was a target milestone, so it was not enforceable. It seemed to be fairly objective in terms of what had to be done by May 30, 2003. Dave Johnson asked why that seemed to be the only milestone that was shortened. Mary Burandt responded that the project was outlined to be constructed under interim status. Part of the milestone alignment was to permit the canister storage buildings as final status units. To do that, Ecology agreed to shorten the permitting schedule, and DOE agreed to accelerate certain design aspects.
- Leon Swenson summarized that the committee probably did not have any immediate action items specific to the Recovery Play, other than to continue to follow it.

Bechtel National Project Meetings – River Protection Project Risks

Pam Brown discussed her involvement with BNI Project Meetings. TWC was invited by DOE-ORP and BNI to send a representative to monthly meetings on project status. Pam volunteered to be the first attendee. One month the meetings give a high-level overview; the next month they are very technical. Pam was impressed with how the showstoppers were being identified and dealt with. BNI indicated that up until the last month of this year, it is probably okay with the budget. The next year becomes problematic with quarterly allocations. Pam was very pleased with the people BNI had hired to work on

the River Protection Project. They were people who had designed and built other nuclear facilities, and they were bringing that experience to Hanford. The safety statistics were also very encouraging for the beginning of the project: only three injuries.

Pam Brown went over a chart showing the design, procurement, and construction timeline for various aspects of the project. Everything was being tracked very closely to be sure it all aligned. By January 2002, 20% of what BNI was required to do would be done on top of what BNFL already did. The report addressed cost variances and contingencies to deal with those variances. BNI is on track to keep up with those expenditures.

Committee Discussion

- Leon Swenson asked Pam Brown what she saw as the benefit to the committee of attending these meetings and what the products were to bring back to the HAB. Pam replied that she found the information really fascinating and could pretty much understand the issues and terminology. It gave her the opportunity to ask questions that were troubling her after the last TWC meeting and for her to share the TWC's perspective. She felt BNI understood how to run a project. The meetings were a tremendous communication opportunity.
- Doug Huston said he would like to be involved in the meetings as a representative from the Oregon Office of Energy. He could attend a meeting once a month and report back to the committee, provided his organization would pay for travel.
- Harold Heacock's reaction was that HAB was a policy board, not a management board. It would be valuable, however, to have some folks attend to help them avoid surprises later down the road and improve communication. The committee just needed to stay out of the details. He suggested that the committee get copies of the monthly review charts.
- Leon Swenson cautioned that whoever attended the meetings could not speak for the HAB, but would be functioning as an information conduit only.
- Ken Bracken felt he would have to attend each meeting to adequately understand the issues, and even then the detail of the presentation might not answer critical questions. He thought this was above and beyond what the committee needed to be involved with. Ken suggested someone attend a meeting quarterly or every six months. Ken Bracken did not think rotating attendance would be beneficial. If they were going to follow the project, they would need continuity.
- Paige Knight emphasized they had already been surprised with the BNFL contract. The public did not want any more surprises. The public wanted to know that HAB, as well as the contractors and DOE, were keeping up on things.
- Harold Heacock commented that the committee worked well as a group and had the ability to share information and talk frankly. One person attending the meetings would be well accepted on the committee without a big problem. Harold did not feel local versus regional representation at the meetings would be a problem.
- Leon Swenson recommended they proceed for four or six months and see if they felt the information flow was beneficial to the committee. Pam Brown could continue to attend the high-level meetings, and Doug Huston could explore the possibility with also attending meetings, especially the more technical meetings.

Balance of Mission – River Protection Project Baseline

Doug Huston framed the Balance of Mission issue. He stated that the first vitrification plant was expensive and the current plans for tank waste treatment required construction of two plants. He feared it was too expensive for Congress to fund. The current climate with the Top-to-Bottom Review had sharpened that anxiety, so several things had been proposed to attempt to lower costs. There were changes to pre-treatment; risk-based retrieval goals (not only in the order in which tanks are retrieved, but how much waste is left behind and which tanks get retrieved); other waste forms (such as grout); and early closure. Doug outlined the issues to consider. This seemed to be a major change in tank waste treatment policy. A lot of changes seemed to be directed at the back of the project. Was there anything they could do at the front end of the project to lower costs? There was a lot of talk of risk-based goals. Did they have a definition of risk? How firm are the plans? How do these changes affect the permitting process?

Leon Swenson added the issue of the Top-to-Bottom Review implications of changing some of the requirements, such as reclassifying waste definitions. In a number of those cases, there were laws in place that would have to be changed before such things could be pursued. The requirements were already there and could not be unilaterally changed.

Steve Wiegman asked how they could finish the tank waste treatment job in a realistic way. The greatest emphasis was on getting the most out of the plant they were building, as well as finding a way to finish the project sooner. DOE-RL also has a lot of costs associated with keeping the site open related to tank farms and tank waste treatment. Harry Boston had started discussions about this. The C3T process then started looking at overall constraints to get the job done. Then the administration established its philosophy, which was partially addressed in the Top-to-Bottom Review. They are still in the framing process as to how to proceed. Steve noted that this was a good opportunity for the committee's input because this was still a work in progress.

Bill Hewitt, a DOE-ORP contractor, discussed DOE-ORP's approach to adopt a better risk-based plan for completing Hanford tank waste cleanup sooner. DOE-ORP has found there is an incredible difference between tanks from a radiological and chemical point of view. They are closing tanks under the RCRA and the TPA, but a lot of the cost is driven because of the radioactivity associated with tanks. DOE-ORP looked at the Nuclear Regulatory Commission's regulations because the current definition of high-level waste is a source-based definition.

DOE-ORP did calculations by taking the quantity of waste in the tanks and the radionuclide count in the tanks and dividing them out. It found that a fair number of tanks from a radiological point of view are low-level already without treatment. From a risk point of view, that suggested DOE-ORP's job was to make this a safer place for people and the environment. Assuming there was a limited amount of time and money for the cleanup, it did not make sense to put as much money into waste that was relatively benign compared to the rest of the high-level waste across the country. The emphasis

with the new administration and the Top-to-Bottom Review is on accelerating risk reduction.

Committee Discussion

- Paige Knight felt they were ignoring the RCRA/chemical part of tanks. She was afraid they would do a semantics game and lose sight of what could harm their health and the environment.
- Paige Knight also asked if they were looking at separating high-level waste from low-activity waste, since they had been managing all waste as high-level for a long time. Bill Hewitt replied that if they only built the Phase 1 plant, they should be capable of processing about 50% of the waste by 2048. If they had a much larger plant than in the original plan by 2018, it would be capable of processing the waste by 2028. Waste would go into pre-treatment. Steve Wiegman added that 10% of the volume would contain 95% of the radioactivity, so by this process, a very significant component of radioactivity would be shipped offsite. Suzanne Dahl noted that about 80-90% of the chemicals would remain onsite.
- Suzanne Dahl commented that Ecology had issues with the way some of the tanks were being categorized. If they were just looking at the definition of high-level waste and where tanks fell on the curie chart, that did not take into account chemicals or, more importantly, risk to groundwater. DOE-ORP had started conversations with Ecology about RCRA requirements for tank closure, looking at which tanks are high-risk and low-risk considering both nuclear and chemical components.
- Roger Stanley said that early tank closure seemed fragmented to Ecology. During the last C3T session on January 24, Ecology had agreed to explore three targets of opportunity with DOE. One was the notion of early closure, taking RCRA and the TPA into consideration. The second target was the potential for design enhancements to the waste treatment plant. The third target was the Balance of Mission. Ecology and DOE had not yet met to discuss these.
- Bill Hewitt said the facility should be capable of handling all high-level waste. The six-ton per day rate meant a change to the baseline. They should be able to handle all high-level waste after pre-treatment. The real issue they faced regarding low-level activity waste was after pretreatment where the expanded facility would be useful. The initial plant could not do all of the low-activity waste, so DOE-ORP was looking at ways to enhance that. With some enhancements, they should be able to get through at least 50% of the waste with the way the plant currently stands. With added technology, they should chip away at that and treat some more waste. Then, there may be some tanks that can be treated through in-situ methods, which would give DOE-ORP another way to safely stabilize waste.
- Pam Brown said one concern was that the testing done on Hanford waste in the 1980s had used grout, but the grout did not hold together and contaminants leached out. She asked if there were any studies done on the waste form after pre-treatment, and if the grout would hold. Steve Wiegman answered that the pre-treatment plant was much more sophisticated than what was looked at in the original grout project.
- Roger Stanley was troubled that Ecology still did not have much information on new tank waste treatment proposals from DOE-ORP, although he had seen different iterations of Harry Boston's Amelia Island presentation. Roger did not see any

details in DOE-ORP's documents to date, so he wanted to start a dialogue with DOE to try to get more information. So far there had been a couple briefings internal to Ecology management, as well as talks with the Attorney General's office. When Ecology had its C3T session, Tom Fitzsimmons, Ecology, reminded DOE that Ecology expected DOE to utilize the M-45 milestone series as they retrieved tank waste and closed tanks.

- Leon Swenson asked what Hanford's figure was for non-vitrification of high-level waste, if 75% was the national figure. Bill Hewitt replied that they needed more clarity on that. Pam Brown noted that the complex-wide tank closure document said DOE currently stores 90 million gallons of waste containing more than 70 million curies, and Hanford had 54 million of those gallons.
- Suzanne Dahl added that when they start breaking tanks into categories and looking at the types of risks from those tanks, it was important to have a lot of pedigree behind the data and look at all of the risks. Just breaking it up by total curies did not give an indication of groundwater risk. When Ecology looks at closing single-shell tanks through the TPA, it follows Milestone M-45, which says closure shall follow retrieval as one whole approach (not just looking at radionuclides or chemicals) and be done under RCRA. From that, Ecology considers Superfund requirements, as well as DOE orders and Nuclear Regulatory Commission rulings as applicable regulations. Ken Bracken hoped DOE, the regulators, and HAB would be open-minded and listen to what was proposed and to examine what the pitfalls might be.
- Harold Heacock said that total cleanup program seemed to go on forever. Harold felt there was a need to look at what was in the tanks. There may be different levels of cleanup required for different types of materials and tanks. High-level, low-activity, and chemical hazardous waste all pose potential threats, and one solution may not fit all. Harold hoped DOE would conduct a comprehensive, risk-based evaluation of tanks.
- Dave Johnson said they needed to take the next Ice Age into account, since it might expose some chemicals and radioactivity.
- Paige Knight commented on the Top-to-Bottom Review, saying that we needed to think of the longer term and remember our children and grandchildren. She felt the country had made a terrible mistake with policy issues. She also thought it was important to point out that the Review seemed to emphasize a "one size fits all" attitude in looking at everything on a national level, not an independent or unique site level.
- Gerry Pollet said another issue was to look at the cost of analyzing closure alternatives and completing adequate characterization to prepare an environmental impact statement (EIS) in the required time. The question was whether they wanted to revisit spending that money on more planning now instead of getting on with the work. Leon Swenson added that the legal requirements would have to be changed in order for some of the paths to be pursued.
- Roger Stanley said one of Ecology's charges as part of the C3T process was to identify decision process that would be associated with implementing these different scenarios. Ecology would be looking at those over the next few months.
- Peter Bengtson asked Steve Wiegman if DOE-ORP would like recommendations as to how the public should be engaged. Steve replied that DOE-ORP would like to

know how it could broaden its efforts to reach out to stakeholders to get input into the process.

- Paige Knight did not think the committee should be drafting advice on something that currently had little credence and was ill-defined.
- Leon Swenson said that HAB regularly put a two-page insert into the *Hanford Update*, and no one was signed up to do the next update. He asked if this would provide a vehicle for some of these issues to be elevated to the public view, as well as to provide a snapshot of the values they felt were important to consider as the process moved forward. The newsletter will come out in about a month. They could look at the key questions that were emerging in committee and HAB discussions. Doug Huston noted that they would probably need an article by early March.
- Paige Knight suggested that she work with Doug Huston and Leon Swenson on the article. They would also take other people's input. Ken Bracken emphasized that the task force was looking at the Central Plateau, and tanks were a large part of that. If the committee was going to put out an op ed piece, it should be on the Central Plateau, not one of its subsets. Pam Brown suggested they wait until after March for such a newsletter article.
- Pam Brown had grave reservations about the consideration of tank waste treatment alternatives other than vitrification. She thought it would be useful for HAB and DOE-HQ to define the legal processes that must be followed in the State of Washington for public involvement and the evaluation and selection of treatment alternatives.
- Gerry Pollet explained that Heart of America Northwest strongly believed that spending money to pursue this was illegal. If DOE wished to start a programmatic EIS on tank closure and some of these other issues, it was free to do so.
- Doug Huston summarized that there appeared to be no energy from the committee to draft advice at this point in time. They should continue to follow these issues. At the next committee meeting, they would have more detail.
- Jeff Luke commented that DOE-HQ appeared to presuppose treatment of some sort with the exception of the category of starting to close low-risk tanks. He raised the idea of building new tanks as part of this process and the possible need for new tanks tied into any of these actions. Jeff thought the committee would want to look at that and find out what DOE, Ecology and the EPA were thinking.
- Paige Knight asked Suzanne Dahl if there was anything new in the last EIS on the comparison of other technologies to accelerate risk reduction. Suzanne responded that steam reforming was new. Suzanne added that tank closure was not in the last EIS.

Tank Closure

Pam Brown explained that she was asked to find out if then HAB had ever issued advice on tank closure. It had not. From a complex-wide tank closure perspective, each site was at a different state of remediation and closure of tanks. Closure at all sites was driven by radioactive waste management, DOE orders, and other guidance documents. Each site was different in how it planned and implemented tank closure. In the Hanford Tank Waste Remediation System (TWRS) EIS, the environmental consequences for a number

of alternatives were evaluated. The Record of Decision (ROD) stated that a phased approach was the best path forward for treating tank waste. Suzanne Dahl clarified that a phased approach meant to do what they could now, and if another technology came along that was better, they could implement it.

Pam Brown observed that Ecology had not wanted to engage in a tank closure discussion because of its desire to get as much material as possible out of the tanks first. Pam showed a drawing of a farmer at a fence of a tank farm as an illustration of a point of compliance. The point was how many curies of exposure the farmer at the fence line would get after all the cleanup work was done. The variables were how many curies/gallons there were in each tank and the infrastructure (pipes or pits that have transmitted radioactivity). If they made a decision based on a risk analysis for the farmer at the fence, they were not getting everything out of every tank to the extent possible. DOE-ORP was looking at what could be left, so it would only get 1,000 curies of exposure at the fence line. That is a very different way of looking at tank farm closure. They had previously looked at getting as much out as possible.

Committee Discussion

- Gerry Pollet commented that this represented an incomplete view. The law requires much more for a point of compliance. The point of compliance would only be there after they had attempted to use all practical efforts to retrieve and treat the wastes. They also needed to consider the intruder scenario. The Top-to-Bottom Review said the land will not be usable, but state law presumes groundwater will be usable. The Top-to-Bottom Review said it was unrealistic to think people would be drinking water at these sites, which is the opposite assumption of toxic site cleanups in Washington State.
- Joe Cruz, DOE-ORP, explained that he struggles with retrieval and closure. If they had \$100 million, how would they distribute the money as they worked toward a final decision of closure? Using what had already been established for the vadose zone program, how would they invest their money wisely across the tanks? Gerry Pollet replied there were concerns with the assumptions developed without public involvement for the vadose zone program. DOE-ORP's assumption was that the area inside the fence was essentially a landfill. Joe replied that he could not say what the possible final land use would be for tank farms.
- Jeff Luke wanted the question of RCRA addressed at a future meeting. Joe Cruz told Jeff that this had been a difficult topic to address for many reasons. DOE-ORP had not done a good job of communicating with Ecology. Thursday's C3T meeting would start to bring some formality to the effort. Roger Stanley, Suzanne Dahl, Joe, and others had written a white paper to start flushing out the process. The pedigree of the data was especially important to Joe. When they start talking about semi-permanent actions, a different level of rigor should be applied. The intent was to make sure DOE had expert panels, so people could provide meaningful input on the decisions. They would be sure to publish their conclusions. DOE had been slow with coming forward because it wanted to have its act together and needed to gain internal consensus on issues. They would keep the Central Plateau in mind because tanks will probably drive what the Plateau can and will be used for.

- Ken Bracken explained what closure meant at two other sites – Savannah River and Idaho. Savannah River has operationally closed two tanks, i.e., taken the waste out, left a small heel, and added grout to the heel. Fortunately DOE has a system by which it involves other sites with reviewing closure plans, and Hanford representatives had raised some concerns about the operational closure at Savannah River. This closure plan has been under review by DOE-HQ's High-Level Waste Steering Committee for two years.
- Joe Cruz commented that the Savannah River people did a “gung-ho” job of cleaning their tanks – they had a good retrieval effort and followed with chemical cleaning. They went to a high level of cleanliness, but they still ended up with a heel and knowingly left it there.
- Ken Bracken explained that the Idaho site is at the front end of what Savannah River is finishing. The intent is to grout a tank and its lines as a way of closing it. Two or three years ago, the HAB was emphasizing closing tanks, and that is still a common theme that comes up at high-level waste meetings and closure workshops. Everyone has been saying that Hanford would love to be in the position to close tanks. He really doubted if two years was enough time to close tanks based on DOE's internal track record.

Regulatory Perspectives

- Suzanne Dahl noted that from Ecology's perspective, it was important for people to know that RCRA says you must empty tanks because they are not a waste site; they are a treatment and storage facility. The TPA says to the extent practical, take out 99% of the waste. If 99% cannot be met, DOE can go through a risk demonstration and show what is left in the tank, what risk it poses, and whether it is okay to leave that portion of the waste there. After multiple retrievals, DOE can go through a process of modifying the 99% if there is a good reason. Ecology thought that was a pretty good process and has been talking to DOE about some processes to close individual tanks per the TPA. It definitely wanted to use the process outlined in M-45, since that says closure shall follow retrieval. A lot has been made about little “c” interim closure. It is not interim; it is going to have to be left that way and is a closure.
- Roger Stanley commented that one of the pitfalls to avoid is the way Savannah River compartmentalized its decision-making. Retrieving a certain amount of waste in order to close a tank cannot be done in isolation of the vadose zone. Ecology was looking at individual tanks, but taking a cross section of a tank farm would pose a lot of issues. Hanford has a substantive amount of past leaks as well as intentional discharge. In addition, Roger Stanley said that actions taken inside the tank at Savannah River to put grout on top of a high heel are now under challenge.
- Suzanne Dahl specified that in the Fiscal Year (FY) 2003 budget, the single shell tank retrieval program for three high-risk tanks was below the funding line. DOE-HQ says DOE-ORP will have to compete for funding for these three tanks. Although they did need to pursue discussions having to do with closing individual tanks, it should not be at the expense of getting real waste out of tanks.

Committee Discussion

- Gerry Pollet stated that tens of millions of dollars of effort would be prematurely diverted away from emptying tanks. He asked what it was being done for, other than some political game to close the tanks. Washington State's standards would never be met by what was done at Savannah River. Why is DOE coming back and diverting time and money to discuss this?
- Pam Brown had mixed feelings. She thought by not engaging in at least some preliminary discussions, they would not be providing a tank perspective to 200 Area cleanup in general.
- Harold Heacock emphasized that whether or not they liked the direction the current administration was headed, it would be that way for the next several years. Hanford needed to recognize where its guidance was coming from and would have to follow it, or find good reasons why it would not. They did not have a clear picture of what it would take to go through EIS issues to determine closure. If they did nothing, though, they would be digging themselves a hole. Harold thought they should encourage DOE and Ecology to sit down and try to define a framework for tank closure.
- Paige Knight agreed that they should be engaged in the path DOE-HQ was leading them down. She also thought they should teach DOE-HQ what they had learned through a good TPA and reinforce their values. Paige agreed that Ecology and DOE would have to start framing those issues, and then HAB could join in.
- Doug Huston asked what advantage little "c" closure would give them. Joe Cruz replied that trying to define what to do next and how the system performs was an important part of interim "c" closure. Doug felt it was better to call that "tank lay up," rather than interim closure. Steve Wiegman commented that during the last C3T meeting, Tom Fitzsimmons, Ecology, said if you were going to lay up a tank, just close it.
- Joe Cruz noted that closure will follow retrieval to the extent necessary. Risk, not volume, is not the primary measure of that. Not recognizing risk from start to finish was irresponsible.
- Jeff Luke commented that HAB had agreed for years that risk was an important factor in the decision-making process, but at the same time volume could not be completely ignored. Jeff assumed that getting as much as possible out of the tanks would get to the point where looking at the cost of removing what was left would not be worth the effort. Until some of the demonstration technologies had been tried, how could Ecology say it agreed they could not get out the hard heel? Did Savannah River really pour grout on top of the hard heel or mix it in? Ken Bracken replied that they poured grout on top of the heel, and there was no mixing.
- Dave Johnson said he had not heard any discussion of the significant contamination under the tanks that had leaked and needed to be removed. Joe Cruz acknowledged that was a big issue. The only way to access some of it was to remove all of the soil and surrounding equipment, which would have to be buried somewhere.
- Doug Huston did not see a lot of energy around developing draft advice at this time. Gerry Pollet suggested that as part of the HAB budget advice in April, they state it is wrong to spend large amounts of money on new plans for closure activities when DOE could not actually fund retrieval in the first place.

- Ken Bracken commented that any advice on this issue should come from the Budgets and Contracts Committee (BCC), not TWC. Hopefully by the time they got to the budget advice, they would have an understanding of the FY2003 budget. Funding waste retrieval demonstration projects would be more important than closure if the money is not available. Ken thought this was more of a budget issue regarding allocation of resources.
- Suzanne Dahl was disturbed that with the Top-to-Bottom Review, if they did a historical review of how vitrification projects had failed in the past, they would see that action was being taken without formal proposals for anyone to review. While the site was talking about C3T, many things were being shared with DOE-HQ about leaving a lot of waste in the tanks.

National Environmental Policy Act Issues

An Environmental Impact Statement (EIS) is required any time a project is undertaken that could have a significant impact on the environment. The first part of the process is an Environmental Assessment (EA), which is a high-level look at a project. It determines whether or not the project would have a significant environmental impact. A Finding of No Significance (FONSI) is issued if the project would not have a significant impact. If there would be a significant impact, a more detailed EIS analysis is required. An EIS requires a formal public involvement process. The question was with all they had heard about changes for tanks, where are they in regards to the National Environmental Policy Act (NEPA)? Did they need to do an EA, followed by an EIS? They ought to consider that discussions on the Balance of Mission to date had completely ignored NEPA compliance

Paige Knight commented that the Top-to-Bottom Review said a lot about NEPA, and Jessie Roberson wanted to streamline the process. Paige thought they should jump on NEPA before it went away. Doug Huston was puzzled that the Top-to-Bottom Review talked about streamlining the NEPA process, since NEPA entails regulatory and legal requirements.

Ken Bracken pointed out that a budget presentation one year ago had addressed the need for NEPA analysis, when DOE stated that low activity glass could be disposed of in trenches. HAB members had said that a NEPA analysis did not allow DOE to make that determination, and DOE would have to modify its past ROD.

The August 1996 Tank Waste Remediation System (TWRS) EIS and associated ROD provide the NEPA coverage for the tank farms. The problem is as they get more distant from those documents, memories fade, and assumptions are forgotten.

The TWRS EIS divided the tank farms work into four components, including waste retrieval, waste immobilization, waste storage, and waste disposal. The EIS said continuing tank farm operations were covered, and activities being done now would continue into the future. It was assumed that waste would be retrieved and moved around under interim stabilization. They looked at various levels of retrieval under various

alternatives. They also looked at different kinds of immobilization. They examined different disposal alternatives, and the EIS concluded that there was not enough information to make a closure decision about tank farms. In the ROD, DOE committed to doing a couple things about closure. Over the next few years, additional data would be collected relative to the vadose zone and other information from items like closure demonstrations. That data would provide enough information to eventually do NEPA documentation for tank farm closure.

On alternative technologies, the EIS assumed DOE was going forward with vitrification. There was, however, a lot of uncertainty with technologies. There may be a need at some point to look at mid-course corrections in the selection or implementation of technologies. DOE agreed to conduct a programmatic review at three key points. DOE has done one programmatic review so far – in 1998 when it switched from two contractors to one. The other two points for review are before the start of hot operations of the Phase 1 plant and before the decision to proceed with procurement and design of the Phase 2 facilities. The ROD says there may be other times for a programmatic review. The ROD also did not commit DOE to retrieving 99% of the waste. Phased implementation was selected because none of the other alternatives met all of the regulatory requirements.

Committee Discussion

- Suzanne Dahl commented that there was a State Environmental Policy Act (SEPA) component, too. Big modifications are a very different issue than a Supplemental EIS done solely for disposing waste they knew would be disposed of from the start. If DOE wanted Ecology to approve a closure plan for tanks, a SEPA analysis would also have to be done. Ecology would also require SEPA for the Balance of Mission or big alternatives changed from the previous TWRS EIS.
- The two things underway were the Supplemental EIS and the programmatic review. The review was called for in the ROD to determine if mid-course actions were needed, which will feed into future activities.
- Ken Bracken pointed out that they needed to find out when the Notice of Intent for the Supplemental EIS would be issued. Peter Bengtson answered that it was back at DOE-HQ, and DOE-ORP was hoping for a turnaround to announce and confirm the public comment period in mid-March.

Committee Business

Leon Swenson brought up the question of a letter related to Harry Boston's departure, which was a broader issue in terms of site managers having enough longevity that they were not always in the process of coming up to speed. Doug Huston felt there were certain times in a project when it was good to change the manager. For the time up until construction, it was good to have a visionary. Once construction starts, a whipcracker is needed. The committee could draft advice that says it is okay to change the project manager, but this is not the right time. Leon asked if it was worth writing a letter if the decision had already been made.

Leon Swenson told the committee they needed to decide whether they should focus their energies on the HAB Exposure Scenario Task Force, or if there were other pressing issues that necessitated a TWC meeting in March. Pam Brown thought they needed to participate in the task force workshop, and then come back together to discuss the tanks perspective afterward. Ken Bracken thought the task force was more important at this point. Pam added that the River and Plateau Committee would be meeting in March.

Steve Wiegman urged the committee not to abandon the issues they had discussed today. The committee issues needed to be in the context of the task force. Steve's sense was the next crucial thing for DOE-ORP would be framing a request to Jessie Roberson for money to work on these issues.

Leon Swenson summarized that Paige Knight raised two issues earlier in the meeting that still needed resolution. One was how to easily share information with the public in a timely fashion. Pam Brown was concerned that things were in a state of flux, and putting something on a website for the public would imply something more concrete. Doug Huston suggested this was an issue for the Public Involvement and Communication Committee. Paige Knight's other request was they needed some way to track the status of major decisions and issues. Ken Bracken recommended that they see if in fact DOE-ORP and its contractors at the senior level track information on a monthly or quarterly basis that would meet this need.

Doug Huston noted that there would be a TWC conference call on February 20th at 1:30 pm. One of the topics for discussion would be if there was any action TWC wanted to take regarding the potential loss of Harry Boston.

Handouts

- TWC Draft Meeting Agenda; February 12, 2002.
- Adopt Risk-Based, Smarter Plan for Completing Hanford Tank Waste Cleanup Sooner, DOE-ORP; February 12, 2002.
- Recovery Plan TPA Changes, DOE-ORP; February 12, 2002.
- BNI-DOE WTP Project Review; December 2001.
- BNI-DOE WTP Project Review – Construction Summary, Fiscal Year 2002 Funding and Cumulative Cost and Commitment; December 2001.
- Site rankings from the Presidents budget web site; February 12, 2002.
- Path Forward, Office of Environmental Management; February 12, 2002.
- News Release: Department of Energy Announces Management Changes for Environmental Management Program; February 13, 2002.
- National Environmental Protection Act Overview and Issues, DOE-ORP; February 12, 2002.
- Environmental Permits and Authorizations to Support Construction, DOE-ORP; February 12, 2002.
- WTP Environmental Permitting Schedule; February 12, 2002.
- Phased CAR Target Schedule, DOE-ORP; November 1, 2001.
- Tank Waste Committee Concerns on Top-to-Bottom Review; February 12, 2002.

- TWC Work Planning Table; November 19, 2001.
- Letter to Harry Boston, DOE-ORP Manager and Ronald Naventi, BNI Project Manager – Re: Waste Treatment Plant (WTP) Dangerous Waste Permit Application (DWPA), Suzanne Dahl; February 6, 2002.
- Three Ecology Permits, Washington State Dept. of Ecology; February 12, 2002.
- Budgets and Contracts Committee Draft Meeting Agenda; February 13, 2002.

Attendees

HAB Members and Alternates

Ken Bracken	Pam Brown	Harold Heacock
Doug Huston	Dave Johnson	Jeff Luke
Gerry Pollet	Dave Rowland	Leon Swenson

Others

Dennis Bowser, DOE-ORP	Suzanne Dahl, Ecology	Allyn Boldt
Joe Cruz, DOE-ORP	Jeff Lyon, Ecology	Brad Erlandson, BNI
Lori Huffman, DOE-ORP	Steve Skurla, Ecology	Sandi Murdock, BNI
Jim Rasmussen, DOE-ORP	Roy Evans, WDOH	Ryan Dodd, CHG
Steve Wiegman, DOE-ORP	Gail Laws, WDOH	Bryan Kidder, CHGI
	John Martell, WDOH	Kim Ballinger, Critique
		Natalie Renner, EnviroIssues
		Ruth Siguenza, EnviroIssues
		Barb Wise, FH
		Dave Nichols, Jacobs
		Peter Bengtson, PNNL
		T. Wright, WTP
		Bill Hewitt, YAHSGS